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**Finite-Temperature Signatures of Spin Liquids in Frustrated Hubbard Model** TAKAHIRO MISAWA, Institute for Solid State Physics (ISSP), The University of Tokyo, YOUHEI YAMAJI, Quantum-Phase Electronics Center (QPEC), The University of Tokyo — The search for the quantum spin liquid, which is a new state of matter, has been one of the main subjects in recent condensed matter physics. Although the quantum spin-liquid ground states have been proposed in theoretical models and frustrated magnets, it is still under hot debate how to characterize the quantum spin liquid, because they do not have clear order parameters. Furthermore, to detect the quantum spin liquid in experiment, it is important to clarify the finite-temperature properties of the quantum spin liquid. In this presentation, we show clear and convincing finite-temperature signatures of the quantum spin liquids in the frustrated Hubbard model [1] by using recently proposed thermal pure quantum state [2]. This method enables us to study the frustrated Hubbard model without any approximations. We also propose that the remaining entropy at moderately high temperatures offers a useful criterion to judge whether system has chance to become the quantum spin liquid. [1] T. Misawa and Y. Yamaji, arXiv:1608.09006. [2] S. Sugiura and A. Shimizu, Phys. Rev. Lett. 108, 240401 (2012).

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